

REMARKS

Applicants have carefully reviewed the Office Action (“Action”) dated August 13, 2010. Claims 1-3, 5-9, 11, 17, 22-23, 28, 33-34, 51, 53, 59, 64-65, 70, 75-76, and 81-83 are pending in this application. Claims 12-16, 18-21, 24-27, 29-32, 35-50, 54-58, 60-63, 66-69, 71-74, and 77-80 were withdrawn due to a previous restriction requirement. Claims 4, 10, and 52 were previously canceled.

Summary of Telephonic Interview

Applicants’ representative Vasanth Sarathy thanks Examiner Bonk for her time and courtesies extended during the telephonic interview on October 27, 2010. During the interview, Applicants’ representative gave Examiner Bonk a broad overview of the background, the technical problem being solved and claimed solution. Applicants’ representative also described the differences between the cited references and the claimed invention. Applicants’ representative contended, more specifically, that the combination of Dubots and Sticht does not teach or suggest the subject matter of Applicants’ claims. No agreement was reached.

Response to §103 Rejections

Independent claim 1 is generally directed to an apparatus for manufacturing coil spring from a wire. The apparatus includes a coil-spring winder and a wire holder. The wire holder includes a reel that can rotate around a reel axis. The wire holder is supported by a coupling, along a holding axis, that allows the wire holder to rotate freely about the holding axis, in response to a torque acting about a cross section of the wire. The holding axis is oriented at a non-zero angle with respect to the reel axis. Rotation of the wire holder about the holding axis substantially alleviates the torque accumulated in the wire. Independent claims 51 and 81-83 are directed to similar subject matter as claim 1.

Claims 1, 51, and 81-83 are patentable over the cited references at least because one or ordinary skill in the art, at the time of the invention, would not have combined and modified the

cited references without a recognized reason to do so. None of the prior art references provide such a recognized reason because none of the references have identified the problem being solved.

The Action needs to show reasons that one of ordinary skill in the art, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited references for combination in the claimed manner. *In re Rouffet*, 149 F.3d 1350 (Fed. Cir. 1998). “Even though the components are known, the combining step is technically feasible, and the result is predictable, the claimed invention may nevertheless be nonobvious when the combining step involves such an additional effort that no one of ordinary skill would have undertaken it without a recognized reason to do so.” *2010 KSR Guidelines Update* (citing *In re Omeprazole*). In the *Omeprazole* case, the claimed drug was coated with two layers. Coating the drug with one layer was known, and the examiner alleged that secondary coatings are also well known. However, the Court held that the claim was nonobvious because the patentee’s reason for applying the secondary coating was because the primary coating and drug interacted in a certain way. Nothing in the prior art recognized that the coating and drug interacted in that way. In other words, none of the prior art references identified the problem and consequently, one of ordinary skill in the art would not have a reason to combine or modify the references.

Similarly, Applicants have discovered the problem of how to alleviate torque accumulated in a wire, particularly a multi-strand wire, during a coil-winding process:

“The systems and methods described herein provide, among other things, a coil winder capable of manufacturing coil springs from multi-strand wire. To this end, the systems include a device for **releasing the rotational torque** that builds on a multi-strand twisted-wire or braided cable during a coil-winding process [emphasis added].” (Applicants’ Specification, paragraph [0034]).

For example, as a coil spring-winder pulls a multi-strand wire, the wire’s knurled exterior surface may torque the wire as it spools into the coil-spring winder. This may impart a torsional torque on the wire, and depending on the direction of the torque and/or the type of wire, may cause the wire to fray or fracture. Applicants modified the coil-winding apparatus to include an additional

degree of freedom to allow the wire to rotate such that the accumulated torque is alleviated. This prevents or reduces damage to the wire. (Applicants' Specification, paragraphs [0034]-[0036]).

None of the cited references show or suggest recognition of the problem of how to alleviate torque accumulated in a wire (even a multi-stranded wire) during a coil-winding process. In particular, evidence for the problem being previously unrecognized can be found throughout the cited references – Dubots, Sticht, and Otzen. For example, Dubots discloses a method of twisting superconductor strands to a certain pitch (Dubots, col. 1, lines 28-31). Dubots does not mention alleviating torque in a strand. Furthermore, one of ordinary skill in the art would understand that twisting a superconductor strand to the specified pitch would add torque to the strand, instead of alleviating torque accumulated on the strand. Thus, Dubots fails to recognize the problem of how to alleviate torque accumulated in a multi-strand wire during a coil-winding process. Sticht discloses a wire coiler including an elongated coil support, a gripping device holding the coil support for rotation, and a device for guiding and feeding the wire to the coil support. Sticht is primarily concerned with providing a wire coiler capable of handling wires of different gauges and controllable to change the pitch and the number of windings in each coil. There is nothing in Sticht that relates to alleviating torque accumulated in the wire during the coil-winding process. In other words, Sticht, too, fails to recognize the problem of how to alleviate torque accumulated in a wire during a coil-winding process. Otzen discloses a method and a system for optimized manufacture of coil springs on automatic spring winding machines. Otzen is primarily concerned with obtaining high accuracy during manufacture of springs by the spring winding machines to minimize scrap material. Otzen is however silent with regards to alleviating torque accumulated in a wire during a coil-winding process, and thus also fails to recognize the problem of how to alleviate torque accumulated in a wire during a coil-winding process. Yet Applicants have recognized this problem and the claimed subject matter provides a solution to this problem. For at least these reasons, claims 1, 51, and 81-83 are patentable over Dubots, Sticht, Otzen, and their combination.

For at least these reasons, Applicants respectfully request reconsideration and withdrawal of the 35 U.S.C. §103 rejections of claims 1, 51, and 81-83. Since claims 2-3, 5-9, 11, 17, 22, 23, 28, 33-34, 53, 59, 64-65, 70, and 75-76 depend from one of claims 1, 51, and 81-83 and add further

limitations thereto, Applicants respectfully request withdrawal of the 35 U.S.C. §103 rejections of these dependent claims as well.

Conclusion

In view of the above remarks, Applicants believe the pending application is in condition for allowance.

We believe we have appropriately provided for fees due. However, if there are any other fees due in connection with the filing of this submission, please charge the fees to our Deposit Account No. 18-1945, under Order No. SMCY-P01-101 from which the undersigned is authorized to draw.

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Respectfully submitted,

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